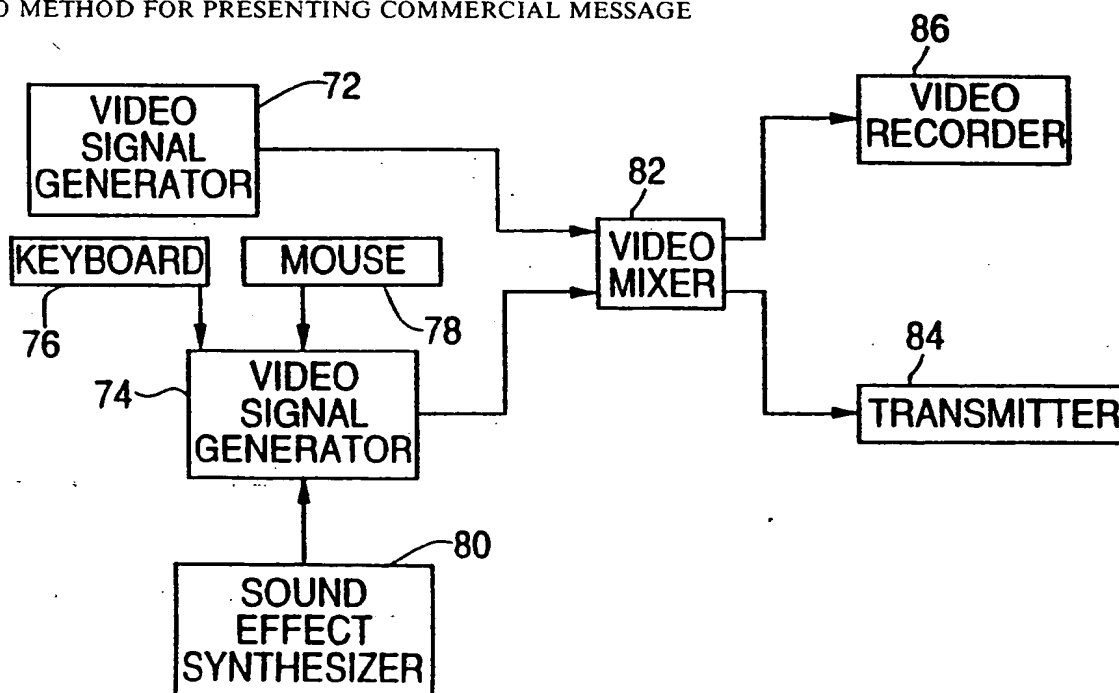




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(54) Title: VIDEO METHOD FOR PRESENTING COMMERCIAL MESSAGE



(57) Abstract

A method for presenting a commercial message to the public comprises the steps of transmitting (84) a video signal to a television monitor, the video signal encoding a television program and the commercial message, and operating the television monitor via the video signal to display the television program thereon. During the display of the television program, a graphic representation related to the content of the commercial message is superimposed on a portion of the image of the television program. Simultaneously with the superimposing, a sound effect is produced which is correlated to the graphic representation and unrelated to the television program, whereby the sound effect is easily distinguishable from sounds of the television program.

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VIDEO METHOD FOR PRESENTING COMMERCIAL MESSAGEBackground of the Invention

This invention relates to a method for use in advertising. More specifically, this invention relates to a video technique for the presentation of a commercial message.

Television advertising suffers from a major affliction. Viewers of regular entertainment programming frequently interrupt their television viewing during the presentation of commercial messages. The viewers occasionally leave the recreation area to obtain food from the kitchen, to make telephone calls or to use sanitary facilities. In any event, the purpose of commercial broadcasting is thwarted: the commercial content of the programming is not communicated to the viewers.

Although many viewers welcome commercial messages so that they may take desired intermissions, other viewers eschew commercials. Sometimes, such viewers record programs on video recording machines and during subsequent playback of the programming, the fast-forward feature of the recording units is used to by-pass the commercial messages. In this event, the commercial content is entirely or partially lost upon the viewers.

Techniques are known for superimposing line drawings on a frozen or stilled frame of a television program. Such techniques are visible particularly during live broadcasts of sporting events such as football games. A sportcaster or play analyzer traces movements executed by football players during a particular play. The sketch lines are superimposed on a stilled video frame of an early stage in the play, thereby extracting and highlighting critical player movements in the course of the play.

It is also known to superimpose alphanumeric messages on a television screen, particularly along a bottom edge thereof. Such messages may alert viewers as to breaking news, without interrupting scheduled broadcasting.

Objects of the Invention

An object of the present invention is to provide an alternative method for the presentation of commercial messages via television.

Another object of the present invention is to provide such a method in which the commercial content is more likely to be communicated to some viewers.

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Another, more particular, object of the present invention is to provide such a method wherein interruption of regular television programming is minimized.

A related object of the present invention is to provide such a method wherein continuity of regular television programming is essentially maintained.

A further particular object of the present invention is to provide such a method which can be inexpensive relative to conventional television commercials.

Yet another particular object of the present invention is to provide such a method which may be adapted for use with video cassette recordings.

Other objects of the present invention will be apparent from the detailed descriptions and drawings included herein.

Summary of the Invention

A method for obtaining a commercial message comprises, in accordance with the present invention, the steps of (1) receiving a video signal at a television monitor, the video signal encoding a television program and the commercial message, (2) operating the television monitor in accordance with the video signal to display the television program thereon, (3) superimposing on only a portion of the image of the television program, during the display of the television program, a graphic representation related to the content of the commercial message, and (4) producing via a loudspeaker, simultaneously with the step of superimposing, a sound effect correlated to the graphic representation and unrelated to the television program, whereby the sound effect is easily distinguishable from sounds of the television program.

According to another feature of the present invention, the method further comprises the step of announcing the identity of an advertiser subsequently to the steps of superimposing and producing. The announcement may be a visual display of the name of the advertiser or the advertised product or service. The visual display may be an alphanumeric designation or a graphic image, for example, the logo of the advertiser. Alternatively or additionally, the announcement may be aural, at least in the case that the advertiser and/or the

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advertised product has a pronounceable name.

According to another, more particular, feature of the present invention, the method also comprises the step of freezing a video frame of the television program prior to the superposition of the graphic representation on the television program. In that event, the graphic representation is superimposed over the stilled image in the frozen frame. Subsequent to the commercial presentation, the regular programming is resumed with its normal apparent motion.

The presentation of a commercial message in accordance with the present invention may be implemented during conventional network broadcasting. In that case the video signal containing the encoded commercial message is wirelessly broadcast. Alternatively, the video signal may be incorporated into cable broadcasting. As yet another alternative, a commercial presentation in accordance with the present invention may be included in a recorded video program for display during playback of the program via a video recording and playback unit.

Where the television program is broadcast either via a cable network or wirelessly, the television program may be prerecorded or live.

Generally, it is contemplated in accordance with the present invention that the graphic representation superimposed on a frozen frame or over a series of images in successive frames of a video program is a line drawing. Thus, the graphic representation may be made via a video drawing instrument and/or program including, for example, a mouse. However, it is possible that in some commercial messages the graphic representation is a solid silhouette, such as a ball, a shoe sole and heel, etc. as will be more clear from particular examples described hereinafter with reference to the drawings.

Pursuant to another particular feature of the present invention, the graphic representation represents a predetermined motion related to the commercial message. For example, in an automobile commercial, four elongate patches representing tire tracks or areas of contact of an automobile with the pavement may move along a path on the screen. In a

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commercial for tennis shoes or other tennis equipment, a representation of a tennis ball may bounce back and forth at the bottom of the television screen over a centrally located vertical line representing a tennis net.

An associated method for use in presenting a commercial message to the public comprises, in accordance with the present invention, the steps of (i) generating a primary video signal encoding successive frames of a television program and sound associated with images in those frames, and (ii) generating a secondary video signal encoding a graphic representation related to the content of the commercial message and further encoding a sound effect correlated to the graphic representation and unrelated to the television program so that the sound effect is easily distinguishable from sounds of the television program upon subsequent simultaneous reproduction of the television program, the graphic representation and the sound effect. In a subsequent step (iii), the primary and the secondary video signal are combined to produce a composite signal. The composite signal is then transmitted to a video reproduction unit such as a video monitor or television set or a video recording unit for later playback on a monitor.

Pursuant to a specific feature of the present invention, a frame of the primary video signal is frozen prior to combination with the secondary video signal. In other words, the secondary video signal is combined with a succession of several identical frames or images in the primary video signal in order to show the graphic representation superimposed on a frozen or stilled frame of the television program. Where the graphic representation incorporates motion, the graphic representation of the commercial message varies in the manner of animation across the succession of identical frames.

Of course, the sound effect in the commercial message is coordinated with the graphic representation and particularly motion thereof to indicate action. According to another feature of the present invention, the sound effect is nonlingual. Thus, the sound effect may simulate the screeching of automobile tires during the transmit of the television screen or video image by tire patch representations. Where the graphic representation is a bouncing tennis ball, the

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sound effect may be derived from a recording of a tennis match.

The graphic representation incorporated into the secondary video signal may be generated as a line drawing, for example, with a mouse or other drawing device.

A method for generating a commercial video message comprises the steps of (i) providing a first video signal encoding a television program, (ii) generating a second video signal encoding a moving graphic representation related to the content of the commercial message, (iii) storing a single video frame of the television program, and (iv) electronically mixing the second video signal and the stored video frame so that the graphic representation is superimposed on only a portion of the stored video frame and shows a moving graphic image over a stilled image of the program in the stored video frame. A broadcast type transmission of the first video signal is then temporarily interrupted to enable broadcast type transmission of the stored video frame with the graphic representation superimposed thereon, in place of the first video signal. In other steps of this method, an audio signal is generated encoding a sound effect correlated to the graphic representation, and the audio signal is also transmitted together with the stored video frame and the superimposed graphic representation during interruption of the broadcast type transmission of the first video signal.

Pursuant to another feature of the present invention, at least one of the second video signal and the audio signal includes an identification of an advertiser. Preferably, but not necessarily, the identification is included in a terminal portion of the respective video signal or audio signal.

Pursuant to a further feature of the present invention, this embodiment of the advertising technique further comprises the step of mixing an identification of the advertiser with the first video signal so that the identification is superimposed on a television monitor during continued display of the television program.

The audio signal and the stored video frame with the superimposed graphic representation may be transmitted wire-

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lessly or over a cable network. The television program may be a live broadcast or prerecorded.

In many television commercials in accordance with the present invention, the sound effect is nonlingual. For example, the sound effect may take the form of the sound of a buzz saw, in a commercial for power tools. Or, in a commercial for an automobile, the sound effect may take the form of a purring engine and screeching tires. Where the commercial is for athletic footwear, the sound effect may be the sound of a basketball repetitively hitting the floor.

The graphic representation may be a line drawing, a silhouette, or a view of an object such as a baseball or a shoe.

Generally, the graphic representation represents a predetermined motion related to the commercial message.

A method for obtaining a commercial message comprises, in accordance with a more general conceptualization of the present invention, the steps of (a) receiving a video signal at a television monitor, the video signal encoding a television program and the commercial message, (b) operating the television monitor via the video signal to display the television program thereon, (c) during the display of the television program, freezing a video frame of the television program to display a stilled image of the television program on the television monitor, and (d) upon the freezing of the video frame, superimposing on only a portion of the image of the television program a graphic representation related to the content of the commercial message.

According to another feature of the present invention, this conceptualization or embodiment of the invention further comprises the step of producing via a loudspeaker a sound effect correlated to the graphic representation. Preferably, for purposes of facilitating viewer recognition of the commercial, the sound effect is unrelated to the television program. For example, a sound effect such as an automobile racing or a circular saw buzzing is substantially different from sounds normally heard during a football game or tennis match.

Preferably, but not in all cases, the identity of an

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advertiser is announced, either visually or audibly, subsequently to the superposition of the graphic representation on a portion of the frozen image of the television program and the production of the sound effect.

As discussed hereinabove, the sound effect may be nonlingual, while the graphic representation represents a predetermined motion related to the commercial message and unrelated to the content of the television program. For example, the graphic image may be a blackened segment of predetermined width tracing a predetermined path across the television screen while a buzzing saw sound is reproduced via the television sound system.

The present invention provides an alternative method for the presentation of commercial messages via television. Inasmuch as the commercial content is presented during the display of the regular television programming, viewers cannot leave or ignore the television screen without subjecting themselves to the risk that they will miss some of the television program. A commercial message in accordance with the present invention can be made sufficiently unobtrusive so that the regular television programming is not interrupted or obscured by the commercial message. However, the commercial message is there and available to anyone paying attention to the television programming.

Because the sound effect content of a commercial message presented in accordance with the present invention is unrelated to the television program, a viewer will be able to distinguish the sound effect from the sounds of the program. For example, an automobile commercial presented in accordance with the present invention might have the sound effect of screeching tires, while the television program takes place in a department store or other location where screeching tires are not normally heard. In addition, the associated line drawing or other representation indicates to the viewer that the sound effect is coming from the television and is a commercial message.

In a commercial message presentation in accordance with the present invention, the commercial content is more likely to be communicated to viewers who would otherwise leave

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the television viewing area during the display of conventional commercial messages.

Interruption of regular television programming is minimized in accordance with the present invention, in the sense that the television programming may continue without interruption in time.

Commercial broadcasting in accordance with the present invention can be inexpensive relative to conventional television commercials. A simple line drawing requires only conventional video mixing equipment, such as that frequently used during sports broadcasts, and a minimal number of personnel. This contrasts sharply with the producers, directors, stage hands, camera crews, special effects experts, sound crew, actors, etc., required to make a conventional television commercial.

Television or video commercials in accordance with the present invention cannot be circumvented by recording an incoming program and selective fast-forwarding during subsequent playback.

A commercial method in accordance with the present invention may be adapted for use with video cassette recordings.

A commercial method in accordance with the present invention is implementable via hardware conventionally used in video production. Such hardware includes a computer station for generating graphics. The graphics may be created directly on the computer with conventional graphics programming or may be fed to the computer from a camera which is operated to optically record a previously drawn, painted or otherwise constructed image. Alternatively, the graphics may be generated from a photograph or picture via a digital scanner connected to the computer.

The computer and/or the digital scanner is connected to a digital repositioning device for feeding a digitally encoded version of the graphic image thereto. The digital repositioning device (called a "Kaleidoscope" or "ADO" in the industry) is operated to move an input image to different locations on a video field. For example, if the input image is a shoe print silhouette, the image can be moved to succes-

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sive different positions indicative of a walking foot. Of course, the graphic image may be made more sophisticated by using several elemental images and combining them to produce an indicated motion. In the case of a shoe motion, one image may be an entire shoe, while another image only shows the toe portion of the shoe. These two images may be alternated to illustrate a more detailed kind of foot motion.

A video program source is connected to a frame store component which extracts a single preselected or selectable frame from a sequence of video frames in a television program. The frame store and the digital repositioning device are connected to a video mixer or video switcher which operates to superimpose the graphic sequence from the repositioning device over the stilled image of the video frame.

The audio portion of a commercial broadcast in accordance with the present invention is produced by a computerized audio generator which is connected to an input of an audio switching circuit. Another input of the switching circuit receives input from an audio program source. The audio switching circuit is operated in tandem with the video switcher to produce sound coordinated with the superposition of the advertisement graphics on a stilled image and the transmission thereof to a television receiver.

In brief, the present invention is directed to producing an animated type image and superimposing that image on either a single frame or a sequence of frames of a television program so that the animated image moves in overlay on the image or images of the television program. Either the animated image itself or the motion of the image is uncharacteristic of the particular television program and therefore distinguishes the superimposed imagery as a commercial insert. The differentiation of the advertising material from the regular television programming may be enhanced or, alternatively, primarily generated, by accompanying sound effects which are uncharacteristic and substantially different from the sounds of the regular television program.

Brief Description of the Drawing

Fig. 1 is a diagram showing a heart beat trace on a television screen, for advertising life insurance or health

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care in a method in accordance with the present invention, the heart beat trace being superimposed on a regularly broadcast television program.

Figs. 2A and 2B are diagrams of a graphic representation in different frames of a television broadcast, showing the motion or path of an automobile, for advertising an automobile, brakes or tires in a method in accordance with the present invention.

Figs. 3A-3C are diagrams of successive frames of a television program, showing different stages of a graphic representation of a commercial message for an automobile in accordance with the present invention.

Fig. 4 is a diagram showing a graphic representation of an electric razor in two successive positions, as superimposed on a regularly broadcast television program.

Fig. 5 is a diagram showing a series of high heel imprints and a pair of eyes following the imprints, for advertising shoes or stockings, in a method in accordance with the present invention.

Figs. 6A and 6B are diagrams showing different stages of a graphic commercial representation for a carbonated beverage, in a method in accordance with the present invention.

Fig. 7 is a block diagram of a video system for implementing an advertising technique in accordance with the present invention.

Fig. 8 is a more detailed block diagram illustrating a conventional computer graphics and video system, which can be used in implementing an advertising technique in accordance with the present invention.

Fig. 9 is a more detailed block diagram of the video system of Fig. 7.

Detailed Description

As illustrated in Fig. 1, a commercial message for life or health insurance includes a line drawing or graphic representation in the form of a heart beat trace 12 as seen on an oscilloscope in a hospital. The heart beat trace 12 appears at the bottom of the television screen 14, superimposed over a conventional television program (not shown).

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The left hand portion of trace 12 includes three oscillations 16 representing the beat of a human heart. Oscillations 16 appear in sequence, the trace starting from the left and moving to the right with a speed characteristic of heart action. Simultaneously with each oscillation 16, a sound effect of a human heart beating is reproduced via the loud-speaker (not shown) of the television set.

In the right hand portion 18 of trace 12, after the appearance of oscillations 16 and the reproduction of their associated beating sound effect, the trace becomes flat and coincides with the sound effect of a steady tone, common in heart monitoring machines in intensive care units of hospitals.

After heart beat trace 12 reaches the right hand edge of television screen 14, the trace disappears and is replaced with an identification of the advertiser. The identification may include the advertiser's name and/or logo such as "Metropolitan Life" or "Beth Israel Hospital" and a slogan such as "We care for your family when you can't" or "When you require the best of care." A visual announcement on television screen 14 may be accompanied by a verbal or auditory announcement.

It is to be noted that the sound effect of a heart beating is a nonlingual sound which would not normally occur in the television entertainment program over which the commercial message is broadcast. For example, such a commercial message could be presented during a baseball broadcast or a situation comedy.

It is to be further noted that in the example of Fig. 1, as well as in other advertising examples described in detail hereinafter, a frame of the television program may be frozen and the graphic representation of the commercial message superimposed on the stilled image. Whether the action is frozen or proceeds continuously during the broadcast of the commercial message, the viewers' attention is held owing to the continued presence of an image of the regularly scheduled television program.

As illustrated in Figs. 2A and 2B, four elongate patches 20 representing tire tracks or areas of contact of an

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automobile with pavement may move along a predetermined path 22 on a television screen 24. During the motion of tire patches or tracks 20 along path 22, a sound effect of an automobile engine may be reproduced via the sound system of the television set. In addition, during motion of tire tracks 20 through curves 26, 28, tire squealing sound effects may be generated. After a short time, as tire tracks 20 approach the end of the predetermined (predrawn) path 22, a circular line drawing 30 moves along a scalloped path 32 in a way as to suggest a ball bouncing into the path of the automobile represented by tire tracks 20. The ball is followed by tiny foot prints 34. At that time, the motion of tire tracks 20 comes to an abrupt halt, accompanied by the sound effect of rubber screeching on asphalt.

The graphic representations or line drawings then disappear and are replaced with an identification of the advertiser. The identification may include the advertiser's name and/or logo, together with an associated slogan, such as "Goodyear: Where the rubber meets the road" or "Meineke: Brakes you can count on." A visual announcement on television screen 44 may be accompanied by a verbal or auditory announcement.

In commercials for automobile tires or brakes, the sound effect of screeching wheels may be sufficient in itself to attract attention and form the mental associations which make a television commercial effective. Accordingly, a line drawing or graphic representation may be omitted. However, the announcement or identification of the advertiser still appears or is heard after the sound effect.

Where a visual effect or graphic representation is omitted from the commercial message, it is recommended that the action of the television program be stopped in order to assist the viewer in distinguishing the sound effect of the commercial message from the sounds the program and to indicate that a commercial presentation is being made.

In the commercial message described hereinabove with reference to Figs. 2A and 2B, freezing a video frame of the television program prior to presenting the commercial message is preferred. Where the action of the television program is

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stopped, the sound effect of the commercial message is naturally and inevitably different from and unrelated to sounds of the television program inasmuch as no sounds of the program are reproduced when a frame is frozen.

Figs 3A-3C show successive stages in a commercial message advertising an automobile such as a BMW. Upon stopping the action of the television program in progress, i.e., upon freezing a frame of that program, a graphic representation 38 of an automobile appears on a television screen 36, for example, along an upper edge thereof. The graphic representation 38 may take the form of a line drawing, or tire tracks, as described hereinabove with reference to Figs. 2A and 2B. Alternatively, as shown in Fig. 3A, the representation 38 may take the form of a logo in the shape of an automobile profile.

Outlines of foot prints 40 appear simultaneously with or shortly after the appearance of automobile representation or profile 38. Foot prints 40 approach automobile representation or profile 38, while a sound effect of heel clicks is generated via the sound system of the television monitor. When the foot prints 40 reach automobile profile 38, part of the profile, for example, the "M" in "BMW," is distorted to simulate or represent the opening of a car door, as illustrated in Fig. 3B. Simultaneously, a sound effect of an opening car door is generated. The distortion of the automobile profile 38 is altered again to simulate a door slamming and a closing door sound effect is simultaneously generated. Thereafter, an engine starting sound is created and subsequently automobile profile 38 moves along a predetermined path 42, the shape of the automobile profile 38 being distorted to simulate speed. During a negotiation of curves 44 in path 42, the sound effect of an engine is reproduced or generated to give the illusion of a performance vehicle moving through a series of gears. Tires squeals may also be heard during the negotiation of curves 44.

After the automobile profile 38 stops, at the end of path 42, the profile disappears and is replaced with an identification of the advertiser, together with a slogan. Where the profile is a BMW, the message may read: "BMW: The Driver's

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Car" or "BMW: A Way of Life." A visual announcement on television screen 14 may be accompanied by a verbal or auditory announcement. Alternatively, the identification of the advertiser may be an acoustic presentation only.

Of course, the commercial message including the advertiser identification is temporary. The television program resumes after the commercial message is over. In addition, it is to be noted that it is not necessary in most examples of the instant commercial method for the action of the television program to be stopped in order for the commercial message to be presented.

As depicted in Fig. 4, a television advertisement for an electric razor may show an outline or line drawing of a razor 46 in a corner of a television screen 48. Razor outline 46 may move in a manner as to indicate tilting and shaving motions, as indicated by phantom outline 50 and arrow 52. The motion is accompanied by a buzzing type sound effect. After the sound effect and the motion of the razor outline are stopped, further sound effects are reproduced to simulate an expression of feminine satisfaction and a kiss.

After the superposition of razor outline 46 on a frozen or continued action television program has been terminated, the advertiser is visually identified along an edge of the screen and/or is acoustically identified via the television's sound system. A slogan such as "You'll love it--so will she" may also appear on screen.

As shown in Fig. 5, a series of foot prints 54 across the bottom edge of a television screen 56 indicates a woman walking. The appearance of foot print outlines 54 is accompanied by the sounds of clicking heels. In addition, a pair of eyes 58 in line drawing form may be shown in an upper corner of screen 56. Eyes 58 move to follow foot prints 54. A whistle may also be generated via the television's sound system.

After the termination of the graphic representations of foot prints 54 and eyes 58, an identification of a shoe or stocking advertiser, together with a slogan, appears on screen or is acoustically communicated.

Figs. 6A and 6B illustrate two steps in a commercial

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message related to a soft drink. Upon the stopping of the action of a television program, a line drawing of a soda machine 60 appears on a television screen 62, superimposed on the frozen image of the television program. The sound effect of a coin or plurality of coins dropping down through the machine is heard. A moving dot 64 within the outline of soda machine 60 may represent the falling currency. Then the sound of a falling bottle or can is heard, with the optional visual indication 66 of the bottle path 64.

Subsequently, as depicted in Fig. 6B, the outline of a bottle on screen 62 moves from an upright configuration 68 to a tilted configuration 70 which is accompanied by a gurgling sound effect. Upon return of the bottle to upright configuration 68, a sigh of satisfaction may be reproduced or generated.

Once again, identification and/or slogan is presented after the termination of the graphic representations and the associated sound effects.

In presenting any of the commercial messages described hereinabove with reference to the drawings, a video signal is transmitted to a television monitor, the video signal encoding a television program and the commercial message. The video signal may be transmitted wirelessly, for example, as part of a network broadcast, or over a cable network. Alternatively, in the event that the television program has been prerecorded on a video cassette, the transmission may be from a video cassette recorder or video disk player to a television set. The video signal is used to operate the television monitor to display the television program thereon. During the display of the television program, the graphic representation, for example, a line, is superimposed on a portion of the image of the television program. Preferably, although not exclusively, the superposition occurs along an edge of the screen in order to maintain a more or less clear view of the image (frozen) or images of the the regularly scheduled television program. Simultaneously with the superposition of the graphic representations related to the commercial message, a loudspeaker in the television set is operated to reproduce a sound effect correlated to the graphic representation and

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unrelated to the television program. This disassociation of the sound effect from the sounds of the program enables easy distinguishing of the sound effect and the related commercial content from the sounds of the television program.

A television program provided with a commercial message as described herein may be a prerecorded show. Alternatively, the television program may be a live broadcast such as a sports broadcast. The freezing of the action during a live broadcast is well known in the art.

In creating a commercial message as described hereinabove with reference to Figs. 1-6B, a primary video signal is generated in a first signal generator 72 (Fig. 7). The primary video signal encodes successive frames of the television program and sound associated with images in those frames. In addition, a secondary video signal is generated in a second signal generator 74. The secondary video signal encodes a graphic representation related to the content of the commercial message and further encoding a sound effect correlated to the graphic representation and unrelated to the television program so that the sound effect is easily distinguishable from sounds of the television program upon subsequent simultaneous reproduction of the television program, the graphic representation and the sound effect.

As further illustrated in Fig. 7, signal generator 74 is connected to a keyboard 76 and a mouse 78 or other video synthesis equipment (not shown). Keyboard 76 and mouse 78 are used to instruct or control signal generator 74 to produce the desired graphic representations. In addition, a sound effect synthesizer 80 is connected to video signal generator to incorporate an audio portion into the video signal.

In a subsequent step, the primary and the secondary video signal are combined in a video mixer 82 to produce a composite video signal. The composite signal is sent via a transmitter 84 to a video reproduction unit such as a video monitor or television set 14, 24, 36, 48, 56, 62 or a video recording unit 86 for later playback on a monitor.

As shown in Fig. 8, a video system for implementing a commercial method as described above comprises a frame store or buffer register 88 connected at an input to a source 90 of

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a video program. Source 90 may take the form of a video camera, in the case of a live television broadcast, or may be a video tape or disc player. Frame store 88 is connected at an output to a video mixer or switcher 92. Video mixer 92 also receives input from a digital repositioning device 94 known as a "Kaleidoscope" or "ADO" in the industry. Repositioning device 94 functions to move an input image to different locations on a video field. Device 94 can also change the orientation or size of input image. For example, if the input image is a baseball silhouette with seam lines, device 94 can move the silhouette to successive different positions to indicate a motion of a baseball after it is hit by a bat.

As further illustrated in Fig. 8, digital repositioning device 94 is connected at inputs to a graphics generator 96, a camera 98, and/or a digital scanner 100 for receiving therefrom digitally encoded graphics or animation. Generator 96 conventionally takes the form of a computer programmed with graphics software. Under the control of the software and in response to an operator's instructions fed to generator 96 via a keyboard or other input (not shown), the computerized graphics generator produces a digitized image which may be a silhouette of uniform color or which may have internal differentiating characteristics. For example, an elevation or profile of an athletic shoe may be completely black or may be provided with curvilinear elements representing seams and lacing. Graphics generator 96 may be operated in conjunction with repositioning device 94 to produce, for example, a silhouette type image of an athletic shoe which alternately flexes and straightens, in imitation of the motion of a real shoe worn by a running person. Two such images may run in alternation with one another across a television screen (with the program in progress or stilled via use of frame store 88) to simulate, for example, a hurdle jumper.

In a commercial for poultry products, the graphic image may be that of a chicken, in silhouette or in a stylized view, white with feathers, beak and comb. The chicken image may be operated on to simulate a chicken's motion with more or less verisimilitude and with more or less humor, depending on

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the desires of the advertiser.

An animated image for a television commercial as described herein may be produced by taking a video picture (via camera 98) of an actual physical object which naturally exists or which has been drawn, painted or otherwise constructed. The object may be superimposed on or in front of a blue background for facilitating combination with other images, as is well known in the special effects subfield of the motion picture industry. Alternatively, an animated image may be drawn, painted or otherwise constructed in essentially two dimensions and digitized by scanner 100.

As further shown in Fig. 8, a control interface (computer) 102 is connected to various elements of the video system, for example, frame store 88, repositioning device 94 and a video switcher 104, particularly a switching circuit 106 thereof. Control interface 102 serves to synchronize and coordinate the functioning of the video system in response to instructions received from a human operator via an input device such as a keyboard and/or mouse (not shown). Interface 102 is also connected to an audio switching circuit 108 which operates in tandem with video switcher 104 to produce an audio signal output at 109 synchronized with video signal output at 110 from switching circuit 106.

Switching circuit 106 is connected at an input to video mixer 92 and to the original program source 88, as well as to control interface 102, for substituting the video portion of a commercial sequence from mixer 92 for the video portion of the program from source 88. Switching circuit 108 is coupled at an input to a computerized audio generator 112 and to an original audio program source 114, as well as to control interface 102, for substituting the audio portion of a commercial sequence from generator 112 for the audio program material from source 114.

Prior to the insertion of a commercial message in a television program, one or more object images are fed to digital repositioning device 94 from graphics generator 96, camera 98 or digitizer 100. The object images have predetermined shapes which may be retained by repositioning device 94 during subsequent electronic manipulation. Repositioning device 94

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is operated to generate a video signal wherein an object image is moved from one location and orientation to another location and orientation relative to a television display field. The apparent motions of the object image are coordinated with sound effects produced via audio generator 112.

In the commercial example of Figs. 3A-3C, black silhouette images of left and right footprints 40 are reproduced by repositioning device 94 at successively different positions to show movement of a person across an edge of a television picture field (Figs. 3A and 3B). The motion is correlated via control interface 102 with clicking sounds of shoes on pavement.

To insert the commercial in a television program, control interface 102 (or another computer video controller) is operated to activate frame store 88 to select a frame from an ongoing television program. That frame is fed to video mixer 92 where the previously generated commercial video signal is combined with the video signal of the stilled image or frozen frame to generate a composite signal encoding the image of the frozen frame with the object images superimposed thereon so that the object or objects appear to move in overlay over the stilled image of the television program. This composite signal is transmitted in place of a predetermined number of frames of the regular television program emanating from source 90. The substitution is effectuated by switching circuits 106 and 108 in response to signals from control interface 102.

It is to be noted that conventional delay circuits may be included in the system of Fig. 8 to ensure a smooth transition between a television program from source 90 and a commercial message from video mixer 92.

Of course, a commercial message produced by the circuitry of Fig. 8 (or Fig. 7 or 9) is displayed on a conventional television monitor without any additional devices.

Fig. 9 depicts an alternative conceptualization of a video system for implementing a method as described hereinabove with particular reference to Figures 1-6B. A primary video signal is generated in a first signal generator or program source 116. The primary video signal encodes succes-

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sive frames of the television program and sound associated with images in those frames. In addition, a secondary video signal is generated in a second signal generator 118. The secondary video signal encodes a graphic representation related to the content of the commercial message and further encoding a sound effect correlated to the graphic representation and unrelated to the television program so that the sound effect is easily distinguishable from sounds of the television program upon subsequent simultaneous reproduction of the television program, the graphic representation and the sound effect.

As further illustrated in Fig. 9, signal generator 118 includes a digital repositioning device 120 connected at an input to a graphics generator 122 conventionally taking the form of a computer programmed with graphics software. As described above with reference to Fig. 8, digital repositioning device 120 is known in the industry as a "Kaleidoscope" or "ADO" and functions to move an input image to different locations (and different orientations and possibly different sizes) on a video field. Signal generator 118 further includes a control interface (computer) 124 connected to repositioning device 120 and possibly graphics generator 122.

Control interface 124 is also connected to control inputs of a video switcher 126 and an audio switching circuit 128 which are components of a video mixer unit 130. Video switcher 126 receives a video component of the primary video signal from program source 116 and the secondary video signal from repositioning device 120, while audio switching circuit 128 receives an audio component of the primary video signal from program source 116 and a secondary audio signal encoding sounds effects from a sound effects synthesizer module 134.

Control interface 124 serves to synchronize and coordinate the functioning of the video system of Fig. 9 in response to instructions received from a human operator via input devices 132 such as a keyboard and/or mouse (not separately shown).

As an example, to clarify the use of the conventional video graphics systems of Figures 8 and 9 in producing a television or video commercial as described hereinabove,

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assume that a graphics element in the form of a small rectangle with a "tail" or dots and dashes is created through the use of generator 96 or 122. This image is transmitted in digitally encoded form to repositioning device 94 or 120. An operator instructs the repositioning device to move the image along the path or trace 12 shown in Fig. 1. The successive positions of the image are distanced from one another by an amount to simulate a heart beat trace as seen on an oscilloscope of a cardiac monitoring unit. In addition, audio generator 112 or sound effect synthesizer 134 is utilized to generate encoded sounds such as a high-frequency steady tone, common in heart monitoring machines in intensive care units of hospitals. That sound effect is matched to the flat terminal portion 18 of the path or trace produced by repositioning device 94 or 120.

The logos and slogans of advertisers are produced in the same way as the other graphics of commercial as described herein. For example, in the system of Fig. 8, computer graphics generator 96 is operated to create the desired shapes with conventional graphics programming. Camera 98 is used to "shoot" camera-ready artwork. Or digitizer 100 scans and encodes two dimensional designs.

With references to Figs. 2A and 2B, tire patches 20 are generated by first creating, in generator 96 or 122, four rectangles, with rounded corners. Digital signals encoding these rectangles are fed to repositioning device 94 or 120. As described above, device 94 or 120 is used to move the four rectangular images along the path or trace 22 shown in Fig. 2A. The successive positions of the rectangles are distanced from one another by an amount to simulate automobile motion. For instance, the forward or leading rectangles may be turned along curves 26 and 28 along path 22.

It is to be noted again that the video graphics systems illustrated in Figs. 7-9 have been known and used for years in the generation of commercial and noncommercial broadcasting material for the television industry. Several hundred such video studios are located throughout the United States.

Although the invention has been described in terms of particular embodiments and applications, one of ordinary

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skill in the art, in light of this teaching, can generate additional embodiments and modifications without departing from the spirit of or exceeding the scope of the claimed invention. For example, although the invention basically contemplates the utilization of graphic representations in the form of line drawings, computer animation and other techniques may be used to superimpose an advertising image on a television program, whether the action continues apace or is interrupted by freezing a frame.

Accordingly, it is to be understood that the drawings and descriptions herein are proffered by way of example to facilitate comprehension of the invention and should not be construed to limit the scope thereof.

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CLAIMS:

1. A method for generating a commercial video message, comprising the steps of:
 - providing a first video signal encoding a television program;
 - generating a second video signal encoding a graphic representation of a moving object related to the content of the commercial message;
 - storing a single video frame of said program;
 - electronically mixing said second video signal and the stored video frame so that said graphic representation is superimposed on only a portion of the stored video frame and shows a moving graphic image over a stilled image of said program in said stored video frame;
 - temporarily interrupting a broadcast type transmission of said first video signal;
 - during interruption of said broadcast type transmission of said first video signal, transmitting said stored video frame with said graphic representation superimposed thereon, in place of said first video signal;
 - generating an audio signal encoding a sound effect correlated to said graphic representation; and
 - during interruption of said broadcast type transmission of said first video signal, also transmitting said audio signal together with said stored video frame and the superimposed graphic representation.
2. The method defined in claim 1 wherein at least one of said second video signal and said audio signal includes an identification of an advertiser.
3. The method defined in claim 2 wherein said identification is included in a terminal portion of said one of said second video signal and said audio signal.
4. The method defined in claim 1, further comprising the step of mixing an identification of said advertiser with said first video signal so that said identification is superimposed on a television monitor during continued display of

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said television program.

5. The method defined in claim 1 wherein said step of transmitting includes the step of wirelessly broadcasting said audio signal and said stored video frame with the superimposed graphic representation.

6. The method defined in claim 1 wherein said sound effect is nonlingual.

7. The method defined in claim 1 wherein said television program is a live broadcast.

8. The method defined in claim 1 wherein said graphic representation is a line drawing.

9. The method defined in claim 1 wherein said graphic representation is animated.

10. The method defined in claim 1 wherein said graphic image is a silhouette of said object.

11. A method for obtaining a commercial message, comprising the steps of:

receiving a video signal at a television monitor, the video signal encoding a television program and the commercial message;

operating the television monitor via said video signal to display the television program thereon;

during the display of said television program, freezing a video frame of said television program to display a stilled image of said television program on said television monitor; and

upon said step of freezing, superimposing on only a portion of the image of said television program a graphic representation of a moving object related to the content of the commercial message.

12. The method defined in claim 11, further compris-

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ing the step of producing via a loudspeaker a sound effect correlated to said graphic representation.

13. The method defined in claim 12 wherein said sound effect is unrelated to said television program.

14. The method defined in claim 12, further comprising the step of announcing the identity of an advertiser subsequently to said steps of superimposing and producing.

15. The method defined in claim 12 wherein said sound effect is nonlingual.

16. The method defined in claim 11 wherein said graphic representation is unrelated to the content of said television program.

17. The method defined in claim 11 wherein said graphic representation is animated.

18. The method defined in claim 11 wherein said graphic image is a silhouette of said object.

19. A method for obtaining a commercial message, comprising the steps of:

receiving a video signal at a television monitor, the video signal encoding a television program and the commercial message;

operating the television monitor in accordance with said video signal to display the television program thereon;

during the display of said television program, superimposing on only a portion of the image of said television program a graphic representation of a moving object related to the content of the commercial message; and

simultaneously with said step of superimposing, producing via a loudspeaker a sound effect correlated to said graphic representation and unrelated to said television program, whereby said sound effect is easily distinguishable from sounds of said television program.

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20. The method defined in claim 19, further comprising the step of providing the identity of an advertiser subsequently to said steps of superimposing and producing.

21. The method defined in claim 20 wherein said step of providing includes the step of temporarily displaying an identification of said advertiser on said television monitor during continued display of said television program.

22. The method defined in claim 20 wherein said step of providing includes the step of reproducing an aural identification of said advertiser via said loudspeaker.

23. The method defined in claim 19, further comprising the steps of (a) freezing a video frame of said television program prior to said step of superimposing and (b) subsequently continuing to present said television program upon completion of said steps of superimposing and producing, said step of superimposing being implemented over the frozen frame.

24. The method defined in claim 19 wherein said sound effect is nonlingual.

25. The method defined in claim 19 wherein said graphic image is a silhouette of said object.

26. A method for use in presenting a commercial message to the public, comprising the steps of:

generating a primary video signal encoding successive frames of a television program and sound associated with images in those frames;

generating a secondary video signal encoding a graphic representation of a moving object divorced from background imagery and related to the content of the commercial message, said secondary video signal and further encoding a sound effect correlated to the graphic representation and essentially unrelated to said television program so that said sound effect is easily distinguishable from sounds of said

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television program upon subsequent reproduction of said television program, said graphic representation and said sound effect;

combining said primary and said secondary video signal to produce a composite signal encoding at least one frame of said television program with said moving object superimposed thereon so that said object appears in overlay over at least one image of said television program; and

transmitting said composite signal to a video reproduction unit for display of said television program with at least said one frame of said television program with said moving object superimposed thereon so that said object appears in overlay over at least one image of said television program.

27. The method defined in claim 26 wherein said video reproduction unit is a video monitor.

28. The method defined in claim 26 wherein said secondary video signal includes an announcement of the identity of an advertiser.

29. The method defined in claim 26, further comprising the steps of freezing said one frame of said television program prior to said step of combining, said secondary video signal being mixed with the frozen frame, whereby said graphic representation is superimposed upon an image of said television program in said frozen frame.

30. The method defined in claim 26 wherein said sound effect is nonlingual.

31. The method defined in claim 26 wherein said graphic image is a silhouette of said object.

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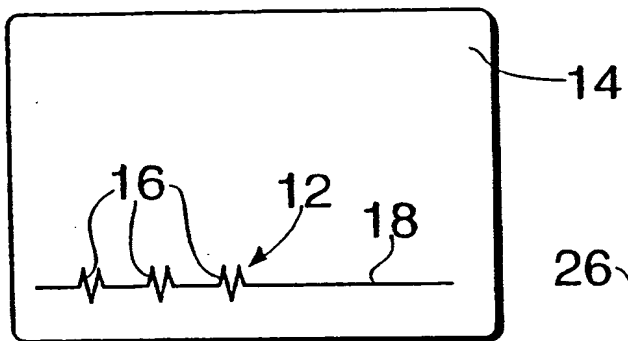


FIG. 1

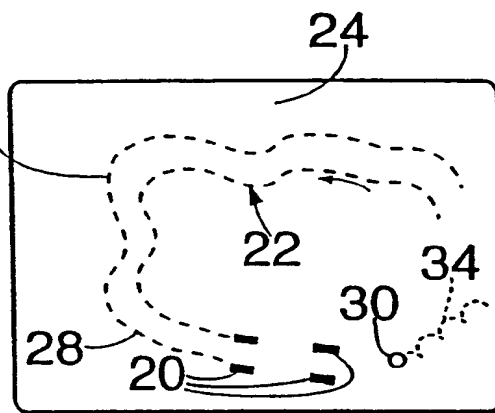


FIG. 2A

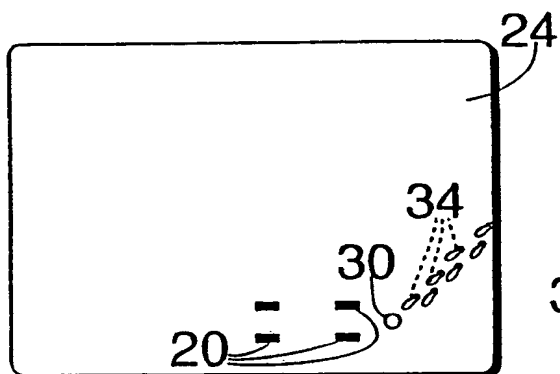


FIG. 2B

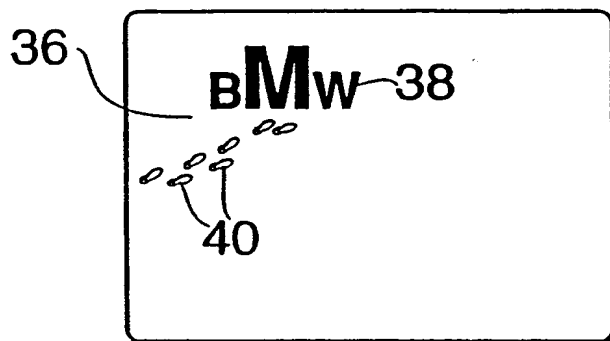


FIG. 3A

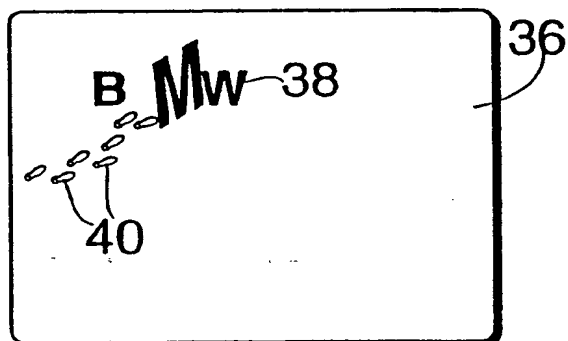
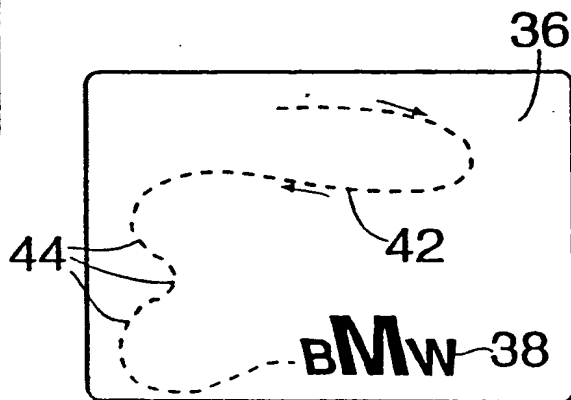


FIG. 3B



SUBSTITUTE SHEET FIG. 3C

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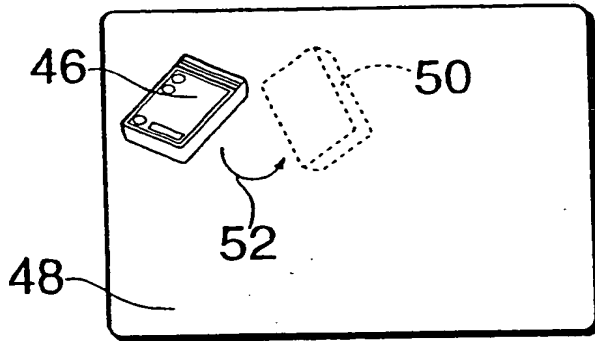


FIG. 4

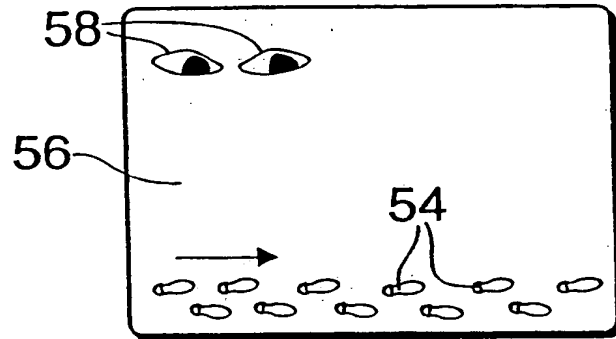


FIG. 5

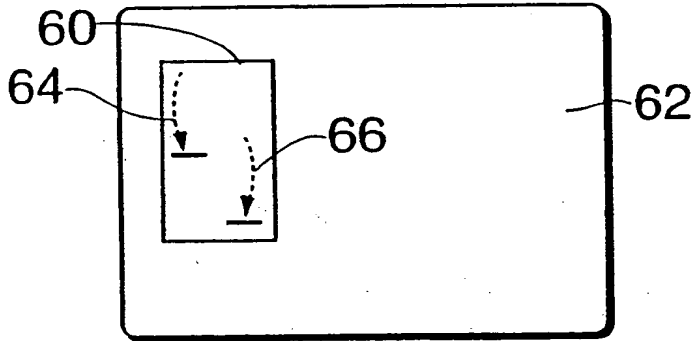
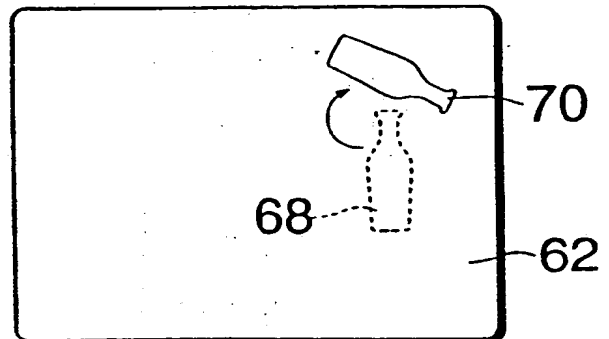


FIG. 6A



SUBSTITUTE SHEET FIG. 6B

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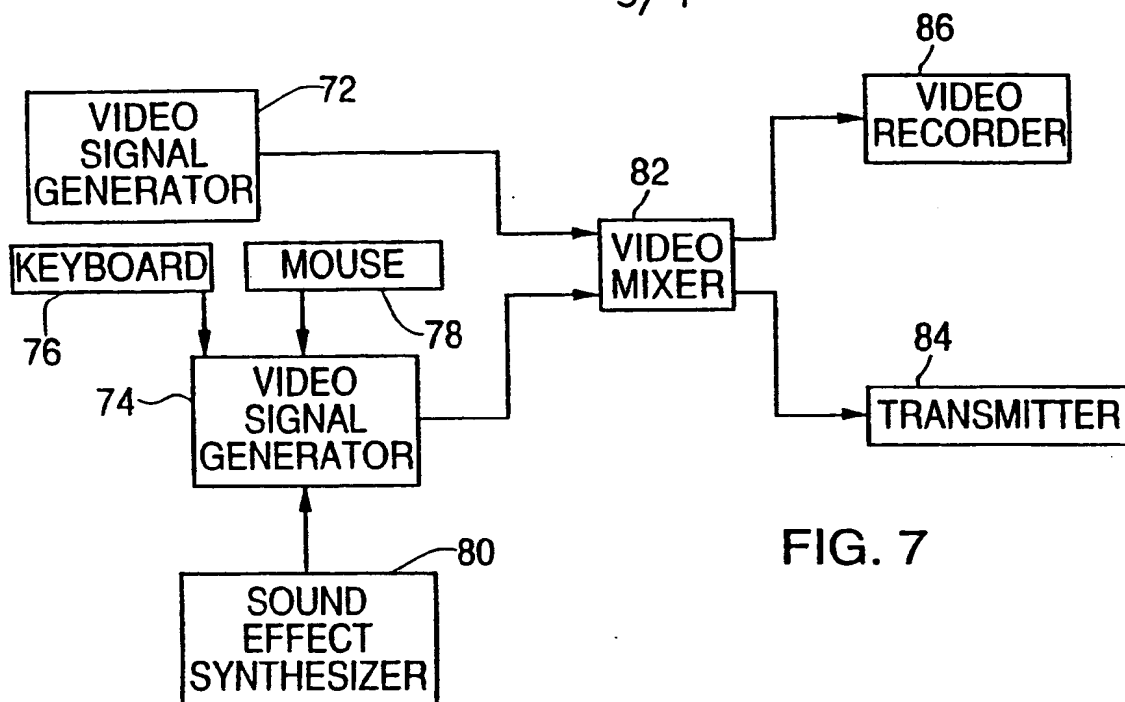


FIG. 7

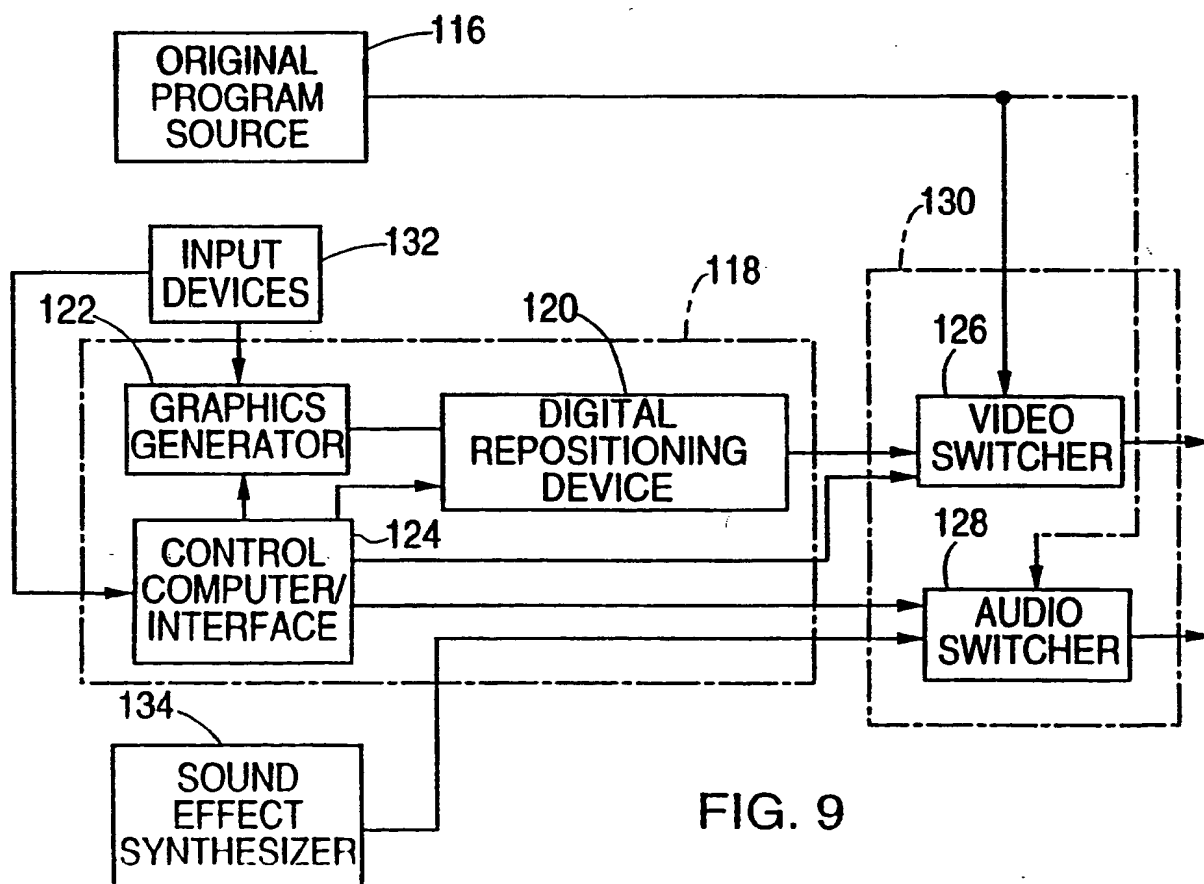


FIG. 9

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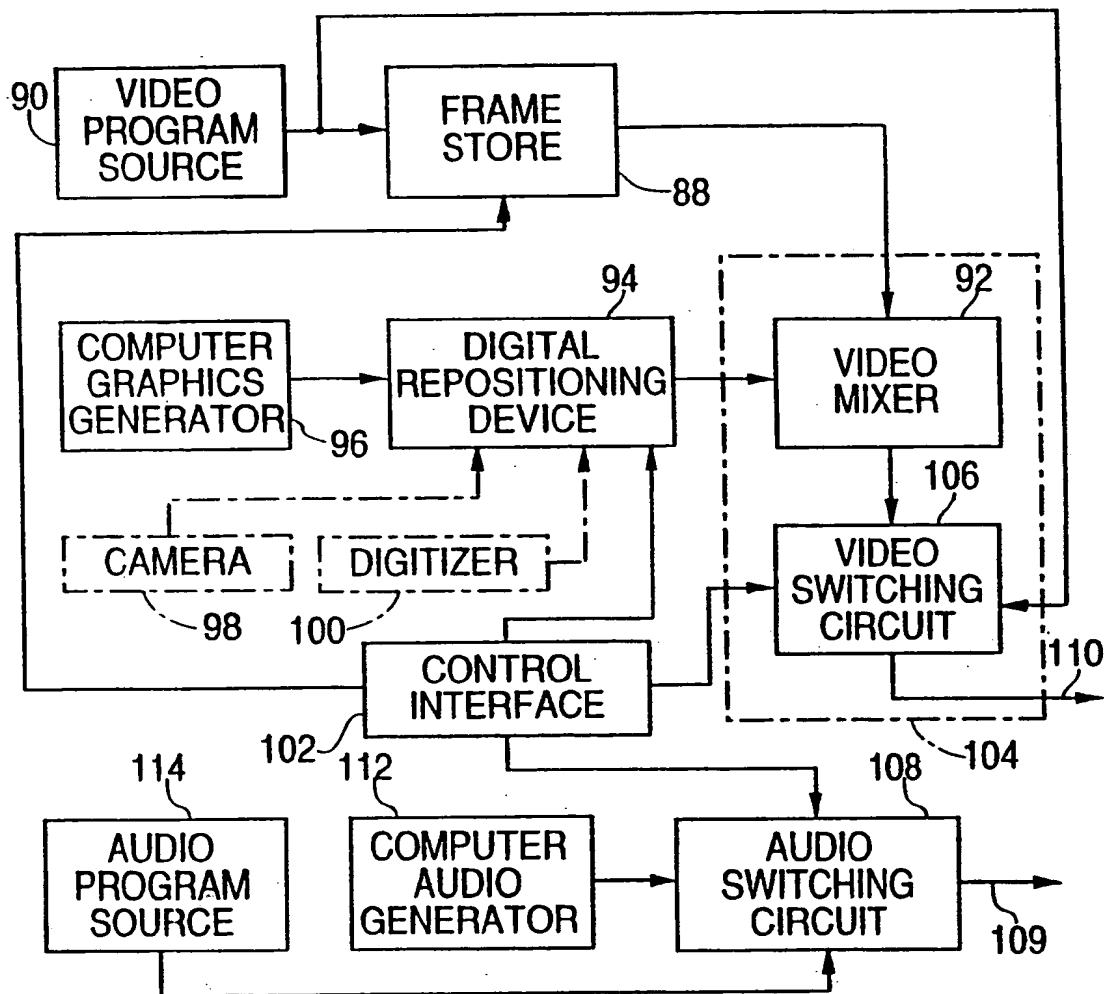


FIG. 8

SUBSTITUTE SHEET

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US93/06145

A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :H04N 5/262

US CL :358/183

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 358/182, 183, 22, 22CK, 22PIP, 142, 143

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
none**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP,A, 60-176373 (NAKAMURA) 10 September 1985 See Entire Document	26, 27, 1-25 and 28-31
Y	JP,A, 03-267885 (CHIBA) 28 November 1991 See Abstract and fig. 5, 1,2 and 7	1-25 and 28-31
A,P	WO,A, WO 93/02524 (ROSSER ET AL.) 04 February 1993 See: Abstract and Figs. 1-4	1-31

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	* T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
* A* document defining the general state of the art which is not considered to be part of particular relevance	* X*	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
* E* earlier document published on or after the international filing date	* Y*	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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* O* document referring to an oral disclosure, use, exhibition or other means		
* P* document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

26 AUGUST 1993

Date of mailing of the international search report

NOV 12 1993

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